

JOURNAL OF MYCOLOGY.

Vol. II.

MANHATTAN, KANSAS, MAY, 1886.

No. 5.

SYNOPSIS OF THE NORTH AMERICAN HYPOCREACEAE, WITH DESCRIPTIONS OF THE SPECIES.

BY J. B. ELLIS AND B. M. EVERHART.

(Continued from page 31.)

B. MYCOGENÆ.

13. *CORDYCEPS OPHIOGLOSSOIDES* (Ehr.) Parasitic on *Elaphomyces granulatus* and *E. muricatus*. Massachusetts (Farlow), New Jersey (Ellis), Pennsylvania (Everhart).

Stromata solitary, rarely cæspitose, simple, or very rarely branched, flexuous, subcompressed, carnose, yellow within, 8–12 cm. high, 5–8 millim. thick; head oblong, obtuse, or attenuated above, often hollow, roughened by the slightly projecting, densely crowded perithecia, dark-rufous, about 2 cm. long and 6–8 millim. thick; stem olivaceous, becoming black, sending out, from its base, yellow fibrous rootlets, which embrace the matrix and penetrate the soil for 2 or 3 inches around; asci cylindrical, 250–300 x 7–9 μ , 8-spored; sporidia crowded, filiform, 150–180 x 7–9 μ , multiseptate, at length breaking up into subellipsoid, yellowish-hyaline joints, 3–4 x 2–3 μ ; paraphyses very slender.

X 14. *CORDYCEPS CAPITATA* (Holmsk.) Link. Hand-bk. III, p. 347. Pers. Myc. Eur., tab. 10, fig. 1–4. Parasitic on *Scleroderma*, Carolina (Ravenel), Fungi Car. Exsicc., V, No. 48.

Stromata cæspitose, or solitary, simple, 3–8 cm. high; club, or head, ovoid-spheroid, roughened by the slightly prominent, ovoid, densely crowded perithecia, liver-color or reddish-yellow, about 1 cm. thick; stipe equal, glabrous, citron color, or yellow, at length fibrose-strigose and yellowish-black, 3–4 millim. thick; asci cylindrical, very long, 15 μ thick; sporidia filiform, very long, at length breaking up into fusoid-elongated, or subbacillary joints, greenish-yellow and 25–40 x 5–6 μ .

C. SPECIES IMPERFECTLY KNOWN.

15. *CORDYCEPS HERCULEA*, Schw. Syn., N. Am., 1153. On the ground, among fragments of decaying wood. Salem, N. C. (Schweinitz).

Head large (12 millim. thick), ovate-clavate, obtuse, decurrent on the attenuate-elongated stem, alutaceous (leather color), yellow within, stipe also yellow; perithecia rather small, concolorous. Height of the whole fungus, about $1\frac{1}{2}$ inches (36 millim.)

In Curtis' Catalogue, pp. 138 and 139, two other species are mentioned, but not described:

16. *CORDYCEPS GRYLLOTALPÆ*, M. A. C. On buried Sand moles.

17. *CORDYCEPS ISARIOIDES*, M. A. C. On dead moths.

GEN. III. *EPICHLÖE*, FRIES.—Stroma effused, mostly amplexicaul; sporidia filiform.

18. *EPICHLÖE TYPHINA* (Pers.)

Stroma pale, thin, surrounding the sheaths and included culms of living grasses (*Phleum pratense*, *Dactylis glomerata* and *Carex*, fide Peck), extending longitudinally for 2—5 cm., and bearing, in the early stage of growth, small ($4-5 \times 3 \mu$), ovoid, hyaline conidia (*Sphacelia typhina*, Sacc.), finally covered with a layer of semi-immersed, soft, carnosomembranaceous, yellow perithecia, with somewhat prominent ostiola. Asci cylindrical, $150-230 \times 7-9 \mu$, slightly narrowed above, with the apex truncate, and capped with a subhemispherical, hyaline crest; sporidia 8 in an ascus, filiform, yellowish, multinucleate (becoming multiseptate) and nearly as long as the asci.

The species is common in Europe, and appears also to be widely diffused in this country. It is reported from Carolina to Pennsylvania and Iowa, and from Northern New York and Canada.

GEN. IV. *HYPOCREA*, FRIES.—Perithecia immersed in a pulvinate, or effused, subsuperficial stroma. Sacc. Syll. II, p. 581.

A. *Stroma vertically elongated.*

19. *HYPOCREA PETERSII*, B. & C. Grev. IV, p. 13.

"Agariciformis; stipite rugoso; peritheciis periphericis; ascis linearibus; sporidiis globosis.

At first sight, this looks like an Agaric invested with some *Hypomyces*, but the fructification is exactly that of a *Hypocrea*. Stem irregular, dilated upwards, about an inch high; head orbicular, irregular, rufous; perithecia both on the under and upper sides; sporidia globose in linear asci." Found in Alabama, by Hon. J. M. Peters.

20. *HYPOCREA ALUTACEA* (Pers.)

On bark of a decaying (maple?) limb, lying on the ground. Newfield, N. J. (Stroma?) about 2 cm. high, clavate, leather-color. Only two specimens were found, and those were immature, so that the fructi-

fication could not be made out, though the surface of the club was finely punctate from the ostiola of the immersed perithecia. Saccardo, in Sylloge, gives the perithecia as $200-225\ \mu$, obtusely papillate, and at length subprominent; asci cylindrical, $56 \times 4\ \mu$; sporidia didymous, upper cell globose ($4\ \mu$), lower cell subovate ($4 \times 3\ \mu$), hyaline. According to Tulasne & Broome, the club-shaped body is not the true stroma, but either *Clavaria ligula* or *Spathularia flavida*, bearing the *Hypocrea* as a parasite.

B. *Stroma pulvinate, disciform or effused.*

Sporidia 2-celled, easily separating in the middle.

a. *Stroma pulvinate, or discoid.*

1. *Sporidia hyaline.*

21. HYPOCREA RUFA (Pers.)

Stromata gregarious, superficial, subhemispheric, elliptical, or irregular in shape, mostly $\frac{1}{2}-1$ cm. in diam., convex when fresh, contracted and rugose when dry, nearly brick-colored. punctulate by the slightly projecting ostiola, whitish within; asci cylindrical, nearly sessile, $65-75 \times 4-5\ \mu$, with 8 one-seriate, didymous sporidia, composed of two subequal, hyaline, subglobose, or subcubical cells, each $3-4\ \mu$ in diam.

22. HYPOCREA LENTA (Tode). Fr. S. M. II, p. 349.

"Stromata gregarious, 2-3 lin., broad, thick, margin repand, disk nearly plain, partially free from the matrix; perithecia minute, globose, immersed, ostiola punctate, minute." The only specimen of this species in our possession was sent from California by Dr. Harkness and is on wood of fir (Herb. Hark. 3496). In this specimen, the stromata are $\frac{1}{4}-\frac{1}{2}$ cm. in diam., nearly round, central portion adnate, leaving a narrow, free margin closely applied to the surface of the wood. The pale, globose, carnose-membranaceous, peripheric perithecia ($200-220\ \mu$ in diam.) lie in a single layer, their ostiola very prominent and distinctly roughening the surface of the dirty-black stroma. Asci cylindrical, $80-110 \times 5-6\ \mu$, without paraphyses, containing 8 two-celled sporidia, each cell subcubical, or nearly globose and $4-4\frac{1}{2}\ \mu$ in diam., or slightly ovoid, $4-5 \times 3-3\frac{1}{2}\ \mu$.

23. HYPOCREA SCHWEINITZII, Fr. Elench. II, p. 60. (*H. contorta*, Schw. Syn. N. Am., 1224. N. A. F., 156.)

Stroma as in the preceding species, except that the central adnate portion is smaller, and, in well-grown specimens, the margin is distinctly undulate and sublobate; perithecia immersed, globose, or subovate ($150\ \mu$), scarcely roughening the surface, which is ^{merely} punctate from the minute, slightly prominent ostiola; Asci cylindrical, $60-65 \times 3\frac{1}{2}\ \mu$, without paraphyses, containing 8 two-celled sporidia, composed of two globose, hyaline cells, $3-3\frac{1}{2}\ \mu$ in diam., and readily separable. On bark and wood. Common.

(To be continued.)

GYMNOSPORIUM HARKNESSIODES, ELL. & HOL.

JOURN. MYCOL., NO. 1, P. 6, AND NO. 2, P. 31 (VOL. 1)

Prof. W. G. Farlow has examined this and considers it only the spores of *Sordaria*, or some related genus. He has recently submitted specimens to De Bary, who agrees with him in saying that the spots have no connection whatever with the leaf, but are the spores, in all probability, of a *Sordaria*, *Chaetomium*, or some related ascomycetous fungus.

E. W. D. H.

A NEW IOWA AECIDIUM.

One of the most conspicuous of all æcidial forms was found last summer, growing in abundance on the lopseed (*Phryma leptostachya*), at Spirit Lake, Iowa. Specimens were submitted to Dr. Farlow, who found no record of an æcidium upon *Phryma*. In view of this fact, the following may be given as a description of this æcidium, being fully aware that it is only a form of some species, known or otherwise, and that a provisional name is a convenient handle until the true one is found:

AECIDIUM PHRYMÆ, nov. sp.—Hypophyllous; spots effused, conspicuous, orange-yellow, not thickened, 1–3 cm. broad; æcidia usually in rows along sides of leaf veins, sometimes in evident circles, prominent, borders not greatly recurved; spores 20–25 μ in diameter, globose, epispore thin, nearly smooth; spermogonia indistinct. On *Phryma leptostachya*, Spirit Lake, Iowa, July, 1885.

B. D. HALSTED.

Iowa Agricultural College, Ames.

UNCINULA POLYCHAETA, B. & C.

UNCINULA POLYCHETA, B. & C. Grev. IV, p. 159.

The description of this species in *Grevillea* is very brief, and is as follows:

“PERITHECIIS SPARSIS; APPENDICIBUS MULTIS. On leaves of *Celtis occidentalis*. Car. No. 5619.

Perithecia scattered: appendages about 28, $1\frac{1}{2}$ times longer than the diameter of the perithecia, hyaline.”

Prof. Spegazzini in his *Fungi Argentini*, Pug. 2, p. 17, describes, under the name of *Uncinula Lynchii*, an *Uncinula*, found on leaves of *Celtis Tala*, near Buenos Ayres, which, on page 44 of the same work, is said to be identical with *U. polychæta*, B. & C., and is taken as the type of a new genus, *Pleochaeta*, S. & S. Two forms are mentioned: in the first of which the perithecia are densely gregarious and partially im

mersed in the mycelium; and in the second, superficial and thickly scattered, globose, 180—200 μ in diameter, at first orange-yellow, then black, surrounded with a circle of simple hyaline, straight, rather rigid, acicular appendages, 140—150 x 5—10 μ , attenuated towards the apex, subobtusate, or uncinately-curved, and finally deciduous. Texture of the perithecia membranaceo-coriaceous, dark and opaque. Asci elliptical-ovate, 90—100 x 30—35 μ , obtusely rounded above, abruptly contracted below into a thick, short pedicel, 2-spored, without paraphyses; sporidia hyaline, elliptical, 30—32 x 18—20 μ , rounded at the ends, granulose.

The description here quoted does not give the number of the appendages nor of the asci. Having received from Spegazzini specimens of the fungus on leaves of *Celtis Tala*. I have carefully examined them, and compared them with the specimens of *Uncinula polychæta*, B. & C., in Rav. Fungi, Car. IV, No. 68, which is certainly the same thing. I find in both the specimens mentioned the number of appendages on several perithecia examined to be certainly 250, by actual count, and probably more, as in places they were matted together so that it was difficult to count them accurately. They are thickest in the middle, and attenuated towards each end, the lower half being distinctly roughened and the tips incurved with a single coil. The asci are about forty in number and, according to my measurement, about 75—80 x 25—30 μ , each containing two sporidia, 25—30 x 15—18 μ . The statement in Grevillea, copied into the Sylloge, that the number of appendages is about 28, is evidently a typographical mistake for 228. The length of the appendages is also less than the diameter of the perithecia. There is certainly no reason that I can see for making of this fungus a new genus separate from *Uncinula*.

J. B. E.

CRYPTOGAMIC BOTANY OF A FLORIDA LOG.--PAPER 4.

BY W. W. CALKINS, CHICAGO, ILLINOIS.

In the depths of the hummock, where I had often wandered in quest of Nature's wonders, I came suddenly upon a fallen giant,—a decayed *Quercus*. Having learned by experience that the "unexpected happens," and sometimes most happily, too, I determined to "size up" the botanical riches here before me. I was not disappointed, as the results show. Beginning with lichens, here were in beautiful fruit *Cladonia fimbriata*, *C. pulchella*, *Lecanora punicea*, *Cladonia rangiferina*, *Thelotrema glaucescens*, *T. Domingensis*. The fungi were rich and abundant. *Polyporus gilvus*, Fr., and also what has passed for *Polyporus serripus*, Fr., and *P. ferruginosus*, Fr., but the two latter, having been carefully examined by Mr. Ellis, must be included in the synonymy of the first. *Polyporus lienoides*, Mont., fine but scarce. *P. arcularius*, Fr., growing in the rotten bark. *Hypochnus rubrocinctus*, Ehrb., *Hypoxyylon tinctor*, Berk., *Stereum complicatum*, Fr., and to close the list, a beautiful *Eutypa*, not

yet identified. By this time my buggy was loaded, and, though I by no means considered the log exhausted, I marked the locality, in my mind, and wended my way home, more than ever impressed with a sense of the little I know and how much there is to learn, even from a log. Here were fifteen species obtained with no great effort in a very short time. Two are also tropical, perhaps more. But one lesson is that nothing, however common, should be neglected. I omit *musci*—several species.

SKETCH OF CURTIS.

BY WM. R. DUDLEY, CORNELL UNIVERSITY.

1835 It is certainly an interesting and important fact in the history of Cryptogamic Botany in America that its two most eminent followers, both northern men by birth, should have been called by their professional duties, as clergymen, to the great state of North Carolina, early in their careers. This state is probably unsurpassed in America in the variety of its plant forms. Its position is central, and the variation of soil and climate remarkable. From the broad, low savannahs to the subalpine summits of "The Black Dome," "The Roan," "The Grandfather," and their richly-forested slopes and valleys, would indeed have been the chosen field for this pioneer work, if choice, instead of accident, had guided these men there. The work of Schweinitz, from 1812 to 1818, and Curtis, from 1830 to 1867—the date of the publication, by the latter, of the CATALOGUE OF THE INDIGENOUS AND NATURALIZED PLANTS OF NORTH CAROLINA,—resulted in the careful determination, preservation and cataloguing of nearly 24,000 species of fungi alone. Indeed, it is estimated that nearly two thirds of these were new to science. It must be remembered that this was mainly accomplished during the first great period of our national existence, viz.: before the civil war, when the science of botany did not receive much general encouragement from the public or from the schools or colleges, especially in the South. This happy outcome of circumstances, as well as his high regard for the distinguished attainments of Rev. Dr. Curtis, evidently led Dr. Gray, in Silliman's *Journal*, in 1868, to urge "our American Mycologist" to prepare a MANUAL OF THE FUNGI OF THE U. S., saying that, from its central position, North Carolina must contain nearly all the species of fungi of the Atlantic States, and unless he did write such a work, a vast amount of valuable knowledge of the forms of this group would be lost to the world, eventually. Unfortunately, such a work was never written. Had it been, what an impulse would have been given to the study of fungi! However, it is clear that a great work in this field was done by the men of the past generation, and the material used by them is still available in herbariums, where it can be consulted by their successors. But there has been danger that the history of the labors of these indefatigable explorers and writers, among whom we reckon Dr. Curtis as

one of the most distinguished, would never be written. Happily, Dr. Thos. F. Wood, of Wilmington, N. C., an old friend of Dr. Curtis, has recently published, in the "JOURNAL OF THE ELISHA MITCHELL SCIENTIFIC SOCIETY," for the year 1884-1885, pp. 9-31, "A SKETCH OF THE BOTANICAL WORK OF THE REV. MOSES ASHLEY CURTIS, D. D.," which gives an admirable account of his career. Nearly all the facts of personal history in this brief account are drawn from the article of Dr. Woods', and the writer here begs leave to express his thanks to that gentleman for permission to use these facts and for other information kindly furnished. He has also had recourse to the brief account in Silliman's *Journal*, Vol. 105, p. 391 (1873).

Moses Ashley Curtis was born May 11th, 1808, in Stockbridge, Mass. His father was Rev. Jared Curtis, of that place, and his mother a daughter of Gen. Moses Ashley. He graduated at Williams College, in the class of 1827, when only nineteen, and three years later went to Wilmington, N. C., as tutor in the family of Gov. Dudley. It is quite evident that he had acquired a strong taste for out-door life and for botanizing, during his youth, among the Berkshire hills, for at once he eagerly began the study of plants about Wilmington, not only determining the species, but observing the habits of the peculiar plants of the region. Dr. Wood presents a charming picture of the young tutor at this period, as follows: "Especially on Saturdays, he made excursions among the sand-hills and savannahs near Wilmington. At that time, Wilmington was a village of about 4,000 inhabitants, and the field for botanizing existed where now are busy streets. Close up to the village reached the pine forests, abounding with a flora rich and novel to the enthusiastic young botanist, while the savannahs, with their strange and interesting *Sarracenia*, *Pyrolanthus* and *Droseras*, and the thousands of gaudy heads of *Liatris* and the brilliant yellows of *Coreopsis* and *Solidago* charmed the eye and filled his portfolio. * * * He found absorbing pleasure in the quiet of the fields and forests; and no doubt he looked forward to the holiday with eager expectation, that he might exchange the constrained duties of the school room for the freedom of the woods and for pleasant intercourse with the old and new floral friends he was to meet. * * He was habitually accurate in his studies, and the results were early relied upon by his correspondents. Coming into a new field of botanical study, it was quite natural that he should have directed his attention to the habits of the very local *Dionaea muscipula*. Saturday after Saturday, he would visit the savannahs, and, lying at length upon the ground, would watch its peculiarities."

The result of this loving study was the completion, in 1833, and the publication, in 1834, in the BOSTON JOURNAL OF NATURAL HISTORY, Vol. 1, of his first contribution to science, an "ENUMERATION OF PLANTS GROWING SPONTANEOUSLY AROUND WILMINGTON, N. C." Remarks were added on new or obscure species. His account of *Dionaea* was extended, and his observations and conclusions so accurate and carefully expressed that, at present, there is little in his account that, living,

he would wish to recall. He corrected several errors then prevailing in regard to it, and confirmed the opinion of Ellis that it consumed the insects captured. In the meantime, returning to Boston, he studied for the ministry, took orders in the Protestant Episcopal church, at Richmond, Va., in 1835, and with his wife went to Lincolnton, in Western North Carolina, to enter upon mission work in the upper and mountain districts. Here he remained some years, and while faithfully ministering to those in need in the lonely forests or valleys of that region, his journeys never failed to bring to him new plant-forms, or old and long-lost ones as he retraced, at times, the track of the elder Michaux among the higher mountain-valleys and peaks.

He became thoroughly familiar with this delightful forest region, and furnished Dr. Gray, on the occasion of his first visit to it, in 1841, with "a complete itinerarium."

The active intellectual cast of the man is shown in his reaching out into new fields, early in his botanical career; for he soon began to accumulate facts on the great and profound questions of geographical distribution of plants, and to interest himself in the lower cryptogams.

His professional work called him to Raleigh, to Washington, Beaufort Co., to Hillsborough, to Society Hill, S. C.,—where he remained nine years; back again to Hillsborough, N. C., in 1856, where he remained till his death, April 10th, 1872.

Schweinitz' death occurred in 1834, or the year Dr. Curtis published his "PLANTS ABOUT WILMINGTON." Unquestionably the great *resume* of the former's work in fungi, his "SYNOPSIS FUNGORUM" (1831), had early attracted the attention of the young clergyman, whose heart had become fixed on botany as an avocation, but, apparently, it was not until ten years after Schweinitz' death that he began seriously to take up the lines laid down by his predecessor. In 1846, he opened correspondence with Mr. Ravenel, of South Carolina, in 1848, with Rev. M. J. Berkely, of England, and, during the latter year, he published his first "CONTRIBUTION TO THE MYCOLOGY OF NORTH AMERICA," in the *American Journal of Science*, Vol. 56, p. 349 (1848). He says at this time that, since the death of the late Mr. Lea, of Ohio, "I do not know of any American botanist who is giving this obscure but interesting order any special attention except H. W. Ravenel, Esq., of South Carolina, and myself." To Dr. Curtis, therefore, all American collections of Fungi made after this date were referred, as a rule. Many of the species described by him were, however, referred to his lifelong friend, Dr. Berkely, for final judgment, and appeared under the joint authorship of "Berk. & Curtis." This work he pursued unremittingly, often at the expense of his health, which was never very robust. After a time, he overcame, through the persuasion of Mr. Berkeley, his prejudice against fungi as food, and during the latter part of his life ascertained by personal testing that 111 species of the fleshy fungi of North Carolina (indicated in his catalogue by italics) were eatable, estimating at least forty or fifty of the eatable species to occur in the mountain regions, but still uncollected by him.

The privations of the civil war, causing a scarcity of meats, turned his attention more strongly to this subject. A southern gentleman, whom the writer recently met, and who was a lad at Hillsborough during a part of the war period, not only referred to Dr. Curtis with the greatest degree of veneration and pride, but described his enthusiasm on the subject of food fungi during those trying years, when he taught his friends and neighbors how to recognize the safe and palatable ones, and succeeded in establishing their very general use. In his letter to the Rev. Mr. Berkeley on the "EDIBLE FUNGI OF NORTH CAROLINA," written after the war, he shows a vast amount of minute information about these plants and the enthusiasm not only of the scientific man but of the worldly mycophagist as well. It is indeed very entertaining reading; and in it he reiterates his former statement that "in some parts of the country, I could maintain a regiment of soldiers five months of the year upon mushrooms alone."

He also advances the interesting theory that as some excellent species occasionally produce, when growing from certain substrata, offensive and unwholesome specimens, the material nourishing a fungus had a great deal to do with its food-qualities, on account of the inability of the fungus to assimilate that material after the manner of higher plants.

In these days, when an interest in the subject of fungus-food is springing up among the cultivated classes of this country, it is of importance to find how very far the experiments of this isolated but gifted scholar were carried a full generation ago, under not simply the stimulus of curiosity or a cultivated taste, but the strong pressure of a people's possible necessity. He was indeed in this, as in many things, far in advance of his time. His interest went so far as to minutely describe, in popular language, about forty species of food-fungi, to illustrate which, colored drawings were made by his son, now Rev. C. J. Curtis. This work, entitled "EDIBLE FUNGI," has never been published. But at this late day, a portion (about one third) will see light in Wm. Wood & Co's. "REFERENCE HAND-BOOK OF MEDICINE," now publishing. Let us hope that the day is not far distant when a publisher, enterprising enough to bring out the whole, will be found.

Dr. Curtis never spoke or wrote unless he had something of importance to say. His papers, therefore, are apt to be brief, but they are all valuable. The last publication of importance was his "CATALOGUE," already referred to, in which he gives, all too briefly, the results of his life work in botany in the form of an almost bare list of the plants he knew, or knew to grow, within the borders of North Carolina. There are in this list:

Flowering Plants	- - - - -	1873 species
Higher Cryptogams	- - - - -	315 "
Lichens	- - - - -	217 "
Algæ	- - - - -	52 "
Fungi	- - - - -	2392 "
Total	- - - - -	4849 "

Some of the *Phænogamia* bore his name as author, while it is estimated that 500 new species of fungi were described either by himself or by "Berk. & Curtis." His account of the "WOODY PLANTS" of his state is full of useful information, and he was ever on the alert to give useful information and to do good to the people of his state; not that he might get a reputation, but simply for their sakes.

The portrait accompanying the sketch above referred to, from the plate in possession of Dr. T. F. Wood, shows a full face of character and refinement. Activity of intellect, keen, intense nervous force, and uncompromising honesty are everywhere expressed in it.

We append a list of his papers on mycology, printed in Silliman's *Journal* and the Philadelphia Academy of Sciences. The Bibliography of a few other papers will be given in the next JOURNAL:

1. CONTRIBUTIONS TO THE MYCOLOGY OF NORTH AMERICA. (*M. A. Curtis.*) Amer. Jour. of Sci., Vol. 56, p. 349 (also note on p. 444), 1848. It contains thirty species in all orders, ten of them new to science, the others not before reported in America. From N. C., S. C. and R. I. (Olney collector of the latter).
2. CONTRIBUTIONS TO THE MYCOLOGY, etc. (*Berkeley & Curtis.*) Amer. Jour. of Sci., Vol. 58, p. 401, 1849. It contains thirty species of *Agaracini*,—three new species (*Berk. & Curt.*) From Nor. Car. So. Car. and R. I.
3. CONTRIBUTIONS TO THE MYCOLOGY, etc. (*B. & C.*) Amer. Jour. of Sci., Vol. 59, p. 171, 1849. It contains forty species of *Agaracini* and *Polyporei*,—eleven of them new (*B. & C.*); two of them new (*Berk.*); chiefly from North Carolina.
4. CONTRIBUTIONS TO THE MYCOLOGY, etc. (*B. & C.*) Amer. Jour. of Sci., Vol. 60, p. 185, 1850. It contains thirty species of Basidiomycetes,—ten of them new (*B. & C.*), from North Carolina and South Carolina.
5. "DESCRIPTIONS OF NEW SPECIES OF FUNGI, coll. by U. S. Exploring Ex., under Ch. Wilkes, U. S. N." (*B. & C.*) Amer. Jour. of Sci., Vol. 61, p. 95, 1851. It contains eight new species of Basidiomycetes and one new *Hypoxyylon*, all from Sandwich and Feegee Islands and from New Zealand.
6. "EXOTIC FUNGI FROM THE SCHWEINITZ HERB." (principally from Surinam, Dr. Hering, of Phila., coll.; a few are from Ohio). (*Berkeley & Curtis.*) Journal of Phila. Acad. of Sciences (new series), Vol. II, pp. 277-294, Pl. 25, with small figures of fifteen new species, 1850-1854. In this list occur descriptions of about thirty new species (*B. & C.*); also about the same number of *Schweinitzian MS.* species are here published.
7. "A COMMENTARY ON THE 'SYNOPSIS FUNGORUM' IN AMERICA BOREALI MEDIA DEAGENTIUM, BY L. D. DE SCHWEINITZ, 1831." (*Berkeley & Curtis.*) Journal of Phila. Acad. of Sciences (new series), Vol. III, pp. 205-224, 1855-1858. In writing this, the authors say: "A

fourth of the material has gone under review. We have had access to the numerous authentic specimens in the herbarium of Sir Wm. Hooker," and "Prof. Torrey has kindly presented us the collection given him by Schweinitz." The authors separate and describe two species as new; and a few new species are published from Schweinitz' MS. descriptions. All commented on are before No. 728 of the *Synopsis Fungorum*, etc., that is, up to and including *Thelephora*.

NEW LITERATURE.

BY W. A. KELLERMAN.

"FUNGI WHICH CAUSE DECAY IN TIMBER." By P. H. Dudley. Journal of the New York Microscopical Society, February, 1886.

The fungus, *Lentinus lepidus*, Fr., was found to be very destructive to railway sleepers, bridge timbers and planks made of yellow, or Georgia pine (*Pinus palustris*, Mill). Its whitish, delicate mycelium secretes fluids possessing acid re-actions, readily softens the thin-walled tracheides, causing their decomposition. "Decomposition of the wood, the so-called 'Dry-rot,'—which, contrary to the general opinion, never takes place in the absence of moisture—as rapidly ensues as the development of the mycelium (which secretes enough moisture for its own nourishment), unless the moisture be dried by external agencies. In railway sleepers, as soon as the thin-walled tracheides are softened by the action of the fungus, larvæ, from one-sixteenth to one-eighth of an inch long, perforate and consume them, leaving the thick-walled, harder cells in the condition of a series of shells, rendering the sleeper useless in less time than would the action of the fungus alone."

"THE MYCOLOGIC FLORA OF THE MIAMI VALLEY." By A. P. Morgan. Polyporei concluded. The Journal of the Cincinnati Society of Natural History, Vol. IX, No. 1. April, 1886, pp. 1-8.

The following are described: *Trametes*, with six species; *Dædalea*, with four species; *Favolus*, with one species; *Merulius*, with six species; *Porothelium*, with one species; and *Solenia*, with two species.

"CHAMPIGNOUS PARASITES DES PHANEROGAMES EXOTIQUES," par M. N. Patouillard. *Revue Mycologique*, 1er Avril, 1886.

"FUNGI GALLICI EXSICCATI," Centurie, XXXVIIe. C. Roumeguere. 1. c.

"SUR QUELQUES DEFOMATIONS DES PHANEROGAMES CAUSEES PAR LES CHINPIGNOUS PARASITES; par M. E. Rostrup. 1. c.

"BOMMERELLA NOUVEAU GENRE DE PYRENOMYCETES." El. Marchel. 1. c.

Bommerella, nov. gen. (*Etym.* a dom. E. Bommer peritissima mycologa Bruxellensi). Fungus conidiophorus *Oosporam* exhibens. Perithecia superficialia, sparsa, ostiolata, contextu parenchymato fuligineo, seltis vestita. Asci octospori, pedicellati, aparaphysati. Sporæ eximie triangulares, depressæ.

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